The elite athlete-patient: a fresh clinical challenge

Contributed by Associate Professor David Gerrard

Associate Professor David Gerrard is a sports physician at the Dunedin School of Medicine, University of Otago. He gives an insight into the challenges faced by clinicians when providing care to elite athletes. When considering treatment options, it is important to be aware of which medicines are subject to restrictions under the World Anti-Doping Agency list of prohibited substances.

Elite athletes are a unique bunch, deserving no less attention than we provide to any patient, despite our occasional difficulties in reconciling their seemingly trivial clinical demands. Obsessive-compulsiveness is a common pre-requisite for contemporary high performance sport, and an athlete's innate desire for an accelerated return to physical activity can make them a clinically challenging prospect.

This editorial comment is not written with the intention of advising doctors how best to treat their patients – this responsibility appropriately resides with the clinician. The aim of this article is to raise awareness of the international "Code" for duty of care, which is unique to sport.[1] It is important that clinicians who provide care for high performance athletes familiarise themselves with these obligations, and consider them as no different as the protocols followed, for example, for an occupational health check or an insurance medical examination.

Doping and drug testing in sport

One particularly perplexing area in sports medicine relates to the use of a group of restricted medicines, defined in sport as "prohibited substances". This is especially challenging when these medicines are also the usual recommended treatment for particular medical conditions. Some physicians vigorously object to the intervention of an external authority that restricts valid therapeutic options when patient wellbeing is the doctor's primary responsibility. In principle there is no argument with this opinion. However, in sport at the highest levels, certain decisions about the use of prohibited medicines are non-negotiable.

Prohibited substances in sport

The internationally agreed List of Prohibited Substances in Sport was established to address the misuse of drugs for purposes of performance enhancement.[1] The list, containing common therapeutic medicines, is formulated and reviewed annually by an international committee of experts appointed by the World Anti-Doping Agency (WADA).[1]

To qualify for consideration of list inclusion, a particular drug must meet two of the following three criteria defined by WADA:

a) The potential for performance-enhancement in sport
b) The potential for harm when used for "non-clinical" purposes
c) Being in violation of "the spirit of sport" as defined in the Code

The ethics of the misuse of drugs in sport

Disgraced cyclist Lance Armstrong was legendary for his survival from testicular cancer and his unprecedented success in seven consecutive Tour de France races. However late in 2012, the widely publicised Report of the United States Anti-Doping Agency (USADA) was the final straw for Armstrong.[3] This document provided unequivocal evidence that his Tour de France successes were enhanced through the use of autologous blood transfusions and an expensive intravenous cocktail that included recombinant erythropoietin, testosterone and corticosteroids. These drugs were administered and closely monitored by medical associates who cunningly circumvented routine drug-testing procedures. Armstrong's undoing was arguably sports greatest "drug-bust" but it provided clear confirmation of medical complicity and the "athlete entourage", and raised concerns for the disregard of ethical clinical practice.[4] Dr Michele Ferrari, the Italian physician implicated with Armstrong, was linked to trafficking, possession and assisting doping. He has received a lifetime sports ban from WADA and the final opinions of the medical jurisdiction are awaited.

Pehaps the most distasteful experiment in the use of performance-enhancing drugs in sport was demonstrated by the government of the former German Democratic Republic (GDR) during the period of the 1960s to 1980s. East German physicians, scientists and coaches collaborated in systematic drug administration to athletes, under the sanction of the GDR Ministry for State Security (Stasi). This clandestine programme of experimentation involved athletes, predominantly females, who received high dose potent drugs without concern for moral or ethical principles.[5 – 9] Under the pretence of research, thousands of "subjects" were implicated in "…one of the largest pharmacological experiments in history… running for more than three decades…". [5]

The consequences of this era in East German sport and politics were profound and far-reaching. Young, female athletes, to whom excessive doses of anabolic androgenic steroids had been administered, suffered long-term consequences. The true facts of this horrendous "experiment" were not made public until the unification of Germany in 1989 when official Stasi documents became available for scientific scrutiny.[5, 8, 9] The world of clinical medicine and sport science still reels from the revelations. In this contemporary human experiment, "…government policy, measured in gold medals, gave scant regard to human suffering and permanent disability."[10]

An increasingly vocal body of contemporary medical opinion has declared the misuse of drugs in sport as an unethical and illegal practice and the Medical Council of New Zealand (MCNZ) has added its support.[11] In 2010 an updated statement entitled "Prescribing performance-enhancing medicines in sport" was posted on the MCNZ website. It states: [11]

> *"Any doctor who knowingly prescribes, administers, traffics, supplies or otherwise assists in the use of prohibited substances, for the deliberate purpose of enhancing sports performance and helping a sports person to cheat, may be subject to disciplinary proceedings and may be liable to a charge of professional misconduct."*

Elite athletes are under the scrutiny of anti-doping authorities and are closely monitored and subjected to testing both in- and out-of-competitive sport. To the public this may appear draconian and a major intrusion of privacy. But to those familiar with contemporary sport, these practices have become "stock-in-trade" to a generation of competitors. These athletes also have an obligation to disclose their status as a tested athlete to their doctor. In New Zealand, athletes in the drug-testing pool will carry a small "wallet-card" provided by Drug-Free Sport New Zealand (DFSNZ), with relevant identification and information for the doctor. However, despite the vigilance of anti-doping agencies and the acceptance by the majority of athletes of strategies to minimise drug misuse, high profile cases provide a stark reminder that the temptation to cheat by using banned, performance-enhancing substances is ever present.[2]

Therapeutic use of prohibited drugs in sport

When, on justified occasions, there is no alternative but to use a listed, prohibited substance to treat an athlete-patient this can be done under the Therapeutic Use Exemption (TUE) process.[12] This is a means by which athletes with genuine medical conditions have the justification for receiving valid, essential treatment. The TUE process protects the athlete from any punitive sanction arising from the presence of a banned substance detected by the analysis of their urine or blood. However, in the interests of consistent application and international integrity, the TUE process is subject to certain pre-requisites, including the provision of adequate diagnostic evidence and specialist endorsement to meet the criteria for a successful TUE application.

The international committee of WADA responsible for establishing TUE Standards, has provided guidelines for several conditions that commonly require the use of prohibited substances.[1] Examples include chronic inflammatory bowel disease (systemic glucocorticosteroids), attention-deficit hyperactivity disorder (methylphenidate or amphetamine), hypogonadal hypogonadism (testosterone) and type 1 diabetes (insulin). The WADA website has instructions for physicians managing these conditions in elite athletes subjected to doping control.

"Retroactive" therapeutic exemption would always be endorsed where the management of any life-threatening episode necessitates the use of a prohibited substance, such as in an emergency department or acute surgical setting. Cases of athletes requiring urgent surgical intervention or treatment for acute asthma or anaphylactic shock are examples frequently encountered in this category. However, the attending physician still remains responsible for ensuring that a complete record is kept of any prohibited substances used and a clear note of their clinical indication is provided to the athlete to substantiate the TUE application.

– David Gerrard

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Providing health care for an athlete: frequently asked questions

Q: What obligations do athletes have in terms of drug testing?

A: Elite-level, New Zealand athletes are constantly under scrutiny by our National Sports Anti-Doping Agency, Drug-Free Sport New Zealand (DFSNZ). These profiled athletes must adhere to doping control procedures in accordance with their obligations to the World Anti-Doping Code established by WADA. This may require the witnessed collection of a urine sample for analysis following an event ("in-competition testing") or without prior notice, involving a sample being collected at a training venue, a residence or elsewhere ("out-of-competition testing"). Athletes may also be required to undergo blood sampling as part of the "athlete biological passport".

Q: How do I know if a patient is a tested athlete?

A: It is the responsibility of individual athletes to inform their doctor of their status as a listed athlete who may be tested for prohibited substance use. In New Zealand, athletes in the testing pool will usually carry a small "wallet card" provided by DFSNZ, with relevant identification and information for the doctor. It is also important to be aware of an athlete who is not currently subject to drug testing in sport, but who may be called in to compete at very short notice.

The testing that the athlete undergoes may be both at the time of competition and at random. It is important then, that clinicians do not assume that a medicine will only be in the body for a short time and can be used in between competitions. Most prohibited substances are prohibited at all times.

Q: What obligations does a doctor have when treating an elite athlete?

A: When providing care to a patient who is an elite athlete, it is necessary to become familiar with the requirements for sports anti-doping. Before administering or prescribing medicines to an athlete who might be subjected to doping control, it is important to first clarify whether the intended medicine is included on the WADA Prohibited List.

If the medicine is prohibited, and no permitted alternative is available, then it is necessary to apply for Therapeutic Use Exemption (TUE) on the athlete's behalf.

Q: How do I know which medicines are prohibited?

A: The list of substances prohibited by the World Anti Doping Agency (WADA) is large. Substances are classified under four categories: substances prohibited at all times for all sports, substances prohibited during competition, substances prohibited from specific sports and limited-use substances.

Many of the prohibited medicines are not routinely prescribed in general practice. However, some prohibited medicines are very commonly used in the community, such as insulin, oral corticosteroids, beta-2 agonists (therapeutic use via inhaler is permitted) and diuretics.

Q: How do you access the WADA List of Prohibited Substances?

A: Check the medicine in the New Zealand Formulary. If a medicine has restrictions on its use based on the current WADA list, it is indicated as "restricted in sport" under Cautions.

For further information on the medicine, visit the DFSNZ website (www.drugfreesport.org.nz); click on "check your medications online" to search for individual medicines, or phone 0800 DRUGFREE, or text the name of the medicine or active ingredient to 4365 (texts cost 20 cents) for full details of its status.

MIMS resources display 'athlete' or an athlete logo next to each medicinal substance, to indicate a permitted medicine or medicine that is permitted with restrictions.

The full 2013 Prohibited List is also available from the World Anti Doping Agency (WADA), see:
www.wada-ama.org/en/Resources

Q: What is the process of Therapeutic Use Exemption?

A: The TUE process protects all athletes and their medical advisors in situations where, in the athlete's best health interests, the use of a prohibited drug is indicated.

Ideally the application should be made before treatment begins. However, the TUE process also allows retroactive approval to be granted in some situations, e.g. treatment in emergency situations, and exceptional circumstances such as the accidental prescription of prohibited substances. The requirements of TUE are included on the application form available on the DFSNZ website. It is necessary to demonstrate a clear diagnostic process and specialist endorsement, especially where the drugs used have a high potential for performance enhancement, e.g. the use of anabolic androgenic agents or potent stimulants.

Further information on TUE and a downloadable application form is available from:
www.drugfreesport.org.nz

For assistance with the TUE process,
phone: 0800 DRUGFREE.

Q: Can athlete patients be prescribed the usual medicines for asthma?

A: The inhaled beta-2-agonists currently permitted in sport (WADA, 2013) are salbutamol (maximum 1600 micrograms over 24 hours), formoterol (maximum delivered dose 54 micrograms over 24 hours) and salmeterol (recommended therapeutic regimen as per medicine datasheet).

Beta-2-agonists by any other method than inhalation are prohibited.

Inhaled corticosteroids are permitted. Oral, IM or IV corticosteroids are prohibited.

A TUE must be applied for if an athlete requires a prohibited medicine (or dose) for control of their asthma.

Q: What can athlete patients be prescribed for pain and inflammation?

A: Pain and inflammation are common in people competing professionally in sport. Mild analgesics and anti-inflammatories, for general treatment of pain, inflammation or headache are permitted options. For example, paracetamol, non-steroidal anti-inflammatory agents, codeine and tramadol are all permitted medicines on the WADA list. Strong opioids, such as oxycodone and morphine, are prohibited during competition.

Beware of combination products and supplements

There have been many cases of athletes who have unknowingly taken prohibited substances which have been "hidden" in a product. Dietary, nutritional and sport supplements and herbal products are not manufactured to the same standard as medicines, and may contain substances that are prohibited in sport.

Labelling standards for supplements manufactured in New Zealand and overseas do not always require a complete list of components on the product label. Therefore, it is often not possible to guarantee the status of a supplement that is used in sport. Elite athletes need to be aware of this risk, and be cautious about the use of supplements; reputable products should be chosen, and the ultimate responsibility that they do not contain prohibited drugs remains with the athlete.

"Cough and cold" preparations have been implicated in cases of use of prohibited substances, but this is less common now since pseudoephedrine (prohibited in sport) was removed from over-the-counter cough and cold products. Pseudoephedrine is now only available on prescription (as a single product), and is a controlled medicine.